ERP-1494 System Interface - BillOfMaterial.tab interface to Maestro

Status	Approved
Owner	BROWN-ext, Kevin
Stakeholders	NARAHARI-ext, Bhargavi GARG-ext, Praful RAO-ext, Lakshmana
Jira Request ID	ERP-1213 - Jira project doesn't exist or you don't have permission to view it.
Jira Development ID	ERP-1494 - Jira project doesn't exist or you don't have permission to view it.

High- Level Specification

Implementing System	Kinaxis Maestro
Invoked by/Invokes	ERP-1491 - Jira project doesn't exist or you don't have permission to view it.
Business Process Reference	04.04.06.01. Data provisioning ERP to Maestro

Functional Overview

BillOfMaterial identifies the parent and child relationships between Assembly parts, such as product assemblies and sub-assemblies, and the Component parts used to produce them, including assemblies, sub-assemblies, and raw materials. It defines how an assembly is built by listing the components required in its production.

Both the Assembly and its Components must already exist in the Part table, as the BillOfMaterial references that table directly. Depending on the system, this structure may also be referred to as a Planning BOM, Sales Order BOM, or Formula, but the purpose stays the same: clearly defining what goes into making a finished item.

Scope and Objectives

The scope of this interface is between Global Integration Suite and Maestro. This document includes details of the BillOfMaterial.tab object.

The objective is to populate the BillOfMaterial and it's referenced tables based on the file provided by Global Integration Suite.

Process Flow Diagram

draw.io

Source page access restriction: Click the link below to check if the page is accessible.

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Step	Description
1	Global Integration Suite transfers transformed Composites / Rest of World data from S/4, and performs some formatting, and sends the data to Maestro.
3	Transferred files will be sent to Maestro's Client SFTP server. This sits outside of the Maestro firewall and is accessible by client using a user id/ password. Files are transferred from this component to the Planning Server SFTP by a Kinaxis automatic process once the trigger file has been placed (see below)
4	Files are moved to this SFTP server automatically, where they await loading into Maestro.
5	Maestro uses the configured DSM (Data Sources and Mapping) setup to load the data into the BillOfMaterial table, with the load initiated either manually or through a scheduled system task.
6	The Data Tables which store information in Maestro

Assumptions

- Data will only come from Global Integration Suite into the Global Data Source, set up in Maestro.

Dependencies

See OnHand.tab System Interface document for dependencies.

Security, Integrity and Controls

See Application Architecture Kinaxis Maestro for security requirements for SFTP/REST based authentication and security.

Configuration Requirements

The Data Sources and Mapping for this interface should be configured once, according to the structure in the Data Structure section below.

The Data Model needs to be configured with the Syway-specific fields shown in the Data Model Custom Fields section below.

Special Requirements

None

Design Rationale

The base of this design has been taken from the existing Maestro implementation, as designed during the Advanced Planning System (APS) Project.

A fit-gap analysis was undertaken within Syway, and changes were identified which have been incorporated into the Syway spec as shown.

API Use

The data object provided by either Integration Suite will be **consumed** by Maestro.

For more information see the Data Integration Document.

Data Structure

The following Maestro fields will be populated by the file provided by Integration Suite:

Column Number	Field Name	Technical Field Name	Data Type	Key	Field Type	Autocreate	Description
1	Type	Type.Value	Ref String	N	ExtractField	Default	BOM type. APS-derived values such as Toll, CoProduct, ByProduct.

2	AssemblyName	Assembly.Name	Ref String	Y	ExtractField	Default	Header material (assembly item).
3	AssemblySite	Assembly.Site.Value	Ref String	Y	ExtractField	Default	Header plant / site for the assembly.
4	BaseKey	BaseKey	String	Y	ExtractField	Default	BOM number.
5	ComponentName	Component.Name	Ref String	Y	ExtractField	Default	Component material used in the BOM.
6	ComponentSite	Component.Site.Value	Ref String	Y	ExtractField	Default	Component plant / site.
7	Alternate	Alternate.Value	Ref String	Y	ExtractField	Y	Alternate Bill of Material identifier.
8	EffectiveInDate	EffectiveInDate	Date	Y	ExtractField	Default	Valid-from date of the BOM component.
9	EffectiveOutDate	EffectiveOutDate	Date	N	ExtractField	Default	Valid-to date of the BOM component.
10	QuantityPer	QuantityPer	Quantity	N	ExtractField	Default	Quantity per 1 unit of header material (handled in transformation layer).
11	Scrap	Scrap	Quantity	N	ExtractField	Default	Process scrap quantity.
12	SubstituteGroup	SubstituteGroup.Value	Ref String	Y	ExtractField	Y	Group of alternative components.
13	SubstituteGroupSite	SubstituteGroup.Site.Value	Ref String	Y	ExtractField	Y	Site associated with the substitute group.
14	ERPTarget	SYE::ERPTarget	Quantity	N	ExtractField	Default	ERP value for the BOM substitution group target. Automation adjusts values based on ERP Target and Sequence.
14	Target	Target	Quantity	N	ExtractField	Default	Populated from SYS:ERPTarget; changes based on originating field.
15	SubstitutionSequence	SubstitutionSequence	Integer	N	ExtractField	Default	Populated from SYS:ERPSequence; determines substitution order.
15	ERPSequence	SYE::ERPSequence	Integer	N	ExtractField	Default	ERP substitution group sequence. Automation sets primary item to sequence 0.

File Formats

See *File Formats - SFTP* section in the Data Integration Document.

Data Model BillOfMaterial table settings:

Allow Data update to:			**Currency**	
Insert, Modify and Delete records	**Insert and Modify records only**	**Allow automatic record creation**	**Determined by Maestro**	**Expression**
Y	-	N	Y	-

Data Model BillOfMaterial custom fields:

Field name	Description	Data type	Key
ERPRecursive	SAP Recursive Flag	String	N
ERPSequence	ERP substitution group sequence. Automation sets primary item to sequence 0.	Integer	N
ERPTarget	ERP value for the BOM substitution group target. Automation adjusts values based on ERP Target and Sequence.	Quantity	N

Processing Logic

See *Processing Logic - SFTP* section in the Data Integration Document.

Delta or Full Load Requirements

The preference is to do a partial load.

For more information on the difference between Full and Delta loads, see the *Full Loads and Delta Loads - SFTP* section in the Data Integration Document.

Interface Alert & Monitoring

See the *Interface Alert & Monitoring - SFTP* section in the Data Integration Document,

Language Requirements

None

User Interface Requirements

Not required.

Sequencing

Reference tables to support BillOfMaterial table data have to be either loaded manually before loading the BillOfMaterial table or at the same time as the BillOfMaterial table is loaded or set to be created automatically in data model or in DSM.

Below tables need to be taken into account before BillOfMaterial table data load:

Table	**SyWay configuration**
SubstituteGroup	Set to allow automatic record creation
Part	To be loaded before or with BillOfMaterial

Volumetrics

Current APS Volume of BillOfMaterial records is 127,000. Because APS makes up approximately 60% of Syway projected records, an expected estimate for Syway is therefore 210,000

This value is expected to grow by 1-2% per year.

Performance Consideration

N/A

Error Handling

See Interface Alert & Monitoring section.

Testing

How to Test

Testing of the interface consists of executing the data load into Maestro and validating the results using standard monitoring and validation tools. After each load, the **Data Import and Update** log is reviewed to confirm successful execution and to identify any errors or warnings generated during the load process.

Loaded data is then validated using a **Data Validation** workbook to ensure data completeness and correctness. Validation checks include confirming that required fields are populated, values are displayed in the correct format, and that data quality issues such as blank fields, incorrect quantities, or zero or invalid unit costs are not present. Additional checks may be performed to ensure consistency across key attributes such as part, location, and quantity.

Any errors or data issues identified during testing are documented in the agreed issue tracking mechanism (for example, in Jira or an action log). Most common error types are duplicate errors, missing references, junk values in input fields.

Duplicate errors need further investigation, in case valid data is flagged as duplicate by Maestro during data load and key field combinations have to be looked into for data uniqueness.

Missing references are to be resolved by either providing the missing data that is required to support the file upload (this could be in the form of a file or Maestro settings to allow for the data to be created automatically) or removing the references from the file.

Required corrections are implemented in the middleware (Integration Suite), and the data is reloaded. Validation steps are repeated until no errors are present (or reasons are fully understood).

Test Conditions and Expected Results

1	Data Load Successful	The Data in the data file matches the data in the Maestro table, and there are no errors.
2	Data File contains 0 records	The Data Update should fail with a status of Pending.
3	Data File contains invalid references (or other error)	The Data Update should Fail, the invalid references should be visible in the error log and the records with the error are not loaded into Maestro, and an alert is sent to the Admin team <Or whatever action is needed> Fields for BillOfMaterial.tab which should be checked for invalid references are shown in the Data Structure table above as "Ref String" and are: Type.Value Assembly.Name Assembly.Site.Value Component.Name Component.Site.Value Alternate.Value SubstituteGroup.Value SubstituteGroup.Site.Value
4	Data file contains duplicates	The BillOfMaterial.tab file must be checked further for data uniqueness with respect to the key fields, in case data is available in file but not in Maestro

Test Considerations/Dependencies

Dependent files should already be loaded into Maestro for these tests to complete. See Sequencing section above.

Other Information

Development Details

Package

Package Name	Parent Package

Other Development Objects

Object Type	Object Name	Purpose/High Level Logic	Design Rationale Reference

Appendix

See also

File	Modified

No files shared here yet.

Change log

Version	Published	Changed By	Comment
CURRENT (v. 13)	**Apr 02, 2026 14:19**	**KAVLEKAR-ext, Nihaal**	
v. 12	Mar 31, 2026 09:02	**KAVLEKAR-ext, Nihaal**	
v. 11	Mar 19, 2026 14:17	**KAVLEKAR-ext, Nihaal**	Updated the Assumptions section
v. 10	Mar 12, 2026 09:33	**KAVLEKAR-ext, Nihaal**	
v. 9	Mar 03, 2026 17:02	**MOHAMOUD-ext, Ahmed**	
v. 8	Mar 03, 2026 16:38	**MOHAMOUD-ext, Ahmed**	
v. 7	Mar 02, 2026 11:03	**KAVLEKAR-ext, Nihaal**	
v. 6	Feb 26, 2026 19:55	**GARG-ext, Praful**	
v. 5	Feb 05, 2026 12:34	**BROWN-ext, Kevin**	
v. 4	Feb 05, 2026 03:25	**MOHAMOUD-ext, Ahmed**	

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Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

Apr 10, 2026	Actor	Type	Activity	Version
Approved	NARAHARI-ext, Bhargavi	State	changed state to Approved at 5:13 pm	v13
Lead Approval	NARAHARI-ext, Bhargavi	State	gave *POD Lead Review* approval at 5:13 pm	
Apr 07, 2026				
	JAIN-ext, Dhiraj	State	changed expiry date to '14 Apr, 2026 08:35 am' at 8:35 am	
		State	changed state to Lead Approval at 8:35 am	v13
Tech Review	JAIN-ext, Dhiraj	State	gave *Tech Review* approval at 8:35 am	
From Mar 02, 2026 to Apr 02, 2026				

	MOHAMOUD-ext, Ahmed and KAVLEKAR-ext, Nihaal	Edit	multiple updates from MOHAMOUD-ext, Ahmed and KAVLEKAR-ext, Nihaal